

REMARKS

In the December 29, 2005 Office Action, the Examiner noted that claims 1-24 were pending in the application; objected to claim 4; and rejected claims 1-3 and 5-24 under 35 USC § 103(a). In rejecting the claims, the Examiner cited U.S. Patents 6,539,118 to Murray et al.; 6,269,188 to Jamali; 6,327,386 to Mao et al.; and 6,473,754 to Matsubayashi et al. (References A-C and E in the March 24, 2005 Office Action) and "Nishiwaki (US 6535619)." Claims 1-24 remain in the case. The rejections are traversed below.

It is not entirely clear what newly cited reference was intended to be used in rejecting the claims and the Advisory Action mailed June 22, 2006 did not clarify this issue. "Nishiwaki (US 6535619)" was identified on page 2 in the paragraph numbered "3." However, U.S. Patent No. 6,535,619 was issued to Suwa et al. and is listed on form PTO-892 attached to the December 29, 2005 Office Action as Reference B, while U.S. Patent No. 6,738,519 was issued to Nishiwaki (Reference A on form PTO-892). Only U.S. Patent No. 6,738,519 has numerals in the drawings that match the reference numerals used in the Office Action; therefore, it will be assumed that the name of the reference, not the patent number, was correct in the December 29, 2005 Office Action.

In item 3 on pages 2-4 of the Office Action, claims 1-3, 5-7, 15, 17 and 24 were rejected as unpatentable over Murray et al. in view of Nishiwaki. In rejecting claim 1, it was asserted that Murray et al. discloses the limitations in claim 1 as originally filed "as detailed and describe[d] in the prior office action dated 3/24/2005" (December 29, 2005 Office Action, page 2, lines 23-24). The March 24, 2005 Office Action asserted that "extracting a code string of a key word" (claim 1, line 2) was disclosed by Figs. 1, 3 and 4; and column 4, line 50 to column 5, line 15 of Murray et al. (see page 3, lines 18-22). Following the citation is the statement "Latin letter Á (Latin letter "A" with acute) is an example of key character code for Latin-1 languages.)" However, this statement does not explain how anything in the cited portion of Murray et al. discloses extracting a "key word" as recited on line 2 of claim 1.

Contrary to the assertions in the March 24, 2005 Office Action, Murray et al. is concerned with determining a language type (e.g., Japanese, English, ...) of an unknown language that is input as a set of text data. The language type determination is conducted by recognizing a set of bit data (Fig. 7 of Murray et al.) that represents language type based on a specification such as the UNICODE example in Fig. 7. Murray et al. is concerned with processing bit data (see Figs. 3, 4 and 7) using a "bit mask" (see Figs. 2, 5 and 6). This objective of Murray et al. is further clarified by the statement in the Background of the Invention section that "the problem of

operating system or application software being unable to display text in different languages remains" (column 1, lines 46-48) and is expressed as "a need for ... automated language handling" (column 1, lines 57-58). There is no suggestion in any of these statements, or anything else that has been found in Murray et al., regarding extraction of a "key word" as recited on line 2 of claim 1.

In the paragraph spanning pages 2 and 3 of the December 29, 2005 Office Action, blocks S11 and S21 in Fig. 2; Fig. 10; and column 3, lines 57-62 of Nishiwaki were cited as disclosing "a method of character recognition that includes inputting a[n] image of the character st[r]ing and segmenting the character string in to the individual character[s] in order to recognize them" (December 29, 2005 Office Action, page 3, lines 1-3). This is a fairly accurate description of these portions of Nishiwaki which relate to "character segmentation ... producing character candidate patterns character by character for ... [a] character string image" (column 3, lines 59-61). However, it is submitted that this teaching in Nishiwaki does not overcome the deficiencies of Murray et al. discussed above, because neither reference teaches or suggests "extracting as key word characters, a string of characters corresponding to the code string of the key word" (claim 1, lines 6-7).

In response to the Advisory Action mailed June 22, 2006, claim 1 has been amended to incorporate the limitations recited in claim 9. In item 5 on pages 5-6, claims 9, 11, 16 and 20-22 were rejected as unpatentable over Murray et al. in view of Nishiwaki and further in view of Matsubayashi et al. In rejecting claim 9, it was asserted that Figs. 5-8 and column 9, lines 27-67 of Matsubayashi et al. "discloses a system for extracting character strings, wherein when the code string ... the key words" (December 29, 2005 Office Action, page 5, lines 11-12, ellipsis in original). Although these words do not contain a coherent statement, it is understood that the Examiner believes Matsubayashi et al. is relevant to the key word limitations recited in at least claims 9, 16 and 20-22. In addition, "Figure 23; Column 27, lines 60-67, Column 24, lines 1-22" (Office Action, page 6, line 4) were cited as disclosing the limitations recited in claim 11. Since column 24, lines 1-22 are not related to Fig. 23 and followed the citation of column 27, lines 60-67, it is assumed that there was a typographical error and the intent was to cite column 27, line 60 to column 28, line 22 which contain two full paragraphs.

The cited drawings of Matsubayashi et al. include Figs. 5 and 6 which are tables of occurrence frequency and probabilities, respectively, for certain Japanese (Kanji) characters and Figs. 7 and 8 which show "a processing example when a program for comparison of division probabilities and for extraction of a characteristic string is applied to a Kanji character string"

(column 13, lines 26-29). Column 9, lines 27-67 of Matsubayashi et al. describes storing occurrence information as illustrated in Fig. 5 and calculating occurrence probabilities of "n-grams" from the occurrence information, where an "n-grams" are defined as "character strings each having n continual characters of a type ... such as 'Kanji' or 'Katakana'" (column 2, lines 40-42). Column 27, line 60 to column 28, line 22 of Matsubayashi et al. describes extraction of a "character string ... of head to third characters as characteristic string" (column 28, lines 21-22) where the ellipsis (...) replaced three Kanji characters.

First, it is noted that nothing has been cited in any of Murray et al., Nishiwaki or Matsubayashi et al. providing any suggestion to combine the teachings of Matsubayashi et al. with Murray et al. or Nishiwaki. As discussed in the communication filed September 12, 2005, Murray et al. does not teach anything regarding recognition of character images, such as those obtained from handwritten characters, and Nishiwaki teaches only a method of handwritten character recognition. Nothing has been cited or found in either reference providing any suggestion for one of ordinary skill in the art to combine the teachings of these references for "extracting a partial area falling between extracted key words from the image of the character string; and ... recognizing a character string in the partial area" (claim 1, lines 8-10). Given the lack of key word recognition in either reference, there is no suggestion of defining the partial area used for character string recognition in the manner recited in claim 1. Similar limitations are recited in claim 15. Therefore, it is submitted that claims 1-3, 5-7, 11 and 15 patentably distinguish over Murray et al. in view of Nishiwaki for at least the reasons discussed above.

In addition, the reason given in the Office Action for combining Matsubayashi et al. with Murray et al. or Nishiwaki, i.e., "it will expedite key character recognition process by considering character strings occurring with higher probability" (Office Action, page 5, lines 16-18) requires the teachings of the subject application to provide the suggestion of such a motive, because Matsubayashi et al. does not teach or suggest anything related to "key words." All that is taught by Matsubayashi et al. is using the frequency of occurrence of characters in finding a "characteristic string." Nothing was cited that provides any suggestion of combining determining a language type as taught by Murray et al. with extracting a characteristic string and searching for a relevant document using the characteristic string, as taught by Matsubayashi et al.

Furthermore, even if it is assumed that the "characteristic string" of Matsubayashi et al. is equivalent to the "key word" recited in the claims of the subject application, nothing was cited or found in any of the references regarding "extracting a partial area falling between extracted key words from the image of the character string; and ... recognizing a character string in the partial

area" (claim 1, lines 11-13). For the above reasons, it is submitted that claim 1, as well as claims 2, 3, 5-7 and 11 which depend from claim 1 and claim 15 which recites similar limitations patentably distinguish over Murray et al. in view of Nishiwaki and Matsubayashi et al.

Like claim 1, claims 16, 17, 21 and 24 have been amended to incorporate the limitations previously recited in claim 9. In addition, claim 17 recites "extracting a character string as a key word if a part of the character string in the key word is extracted when a key character or a key word stored in said key character/word storage unit is extracted from the image of the character string to be recognized" (claim 17, lines 4-7). Claim 21 recites "recognizing individual character images in an image of a character string to identify a word for each area delimited by each key character or key word in the character string image to be recognized" (claim 21, last 3 lines). As discussed above with respect to claim 1, Murray et al. in view of Nishiwaki and Matsubayashi et al., does not teach or suggest defining an area of character recognition based on key words (or key characters). Therefore, it is submitted that claims 16, 17, 21 and 24 patentably distinguish over Murray et al. in view of Nishiwaki and Matsubayashi et al. for many of the reasons discussed above with respect to claim 1 and the lack of teaching or suggestion to combine the references.

With respect to claims 20 and 22, nothing was cited suggesting that Murray et al. in view of Nishiwaki and Matsubayashi et al. teach or suggest "obtaining a number of occurrences of each character in a list stored in advance based on the list of character strings in a category to be recognized" (e.g., claim 20, lines 2-3, emphasis added). Therefore, it is submitted that claims 20-23, all of which include the limitation quoted above, patentably distinguish over Murray et al. in view of Nishiwaki and Matsubayashi et al. for this reason

In item 4 on pages 4-5, claims 8 and 10 were rejected as unpatentable over Murray et al. in view of Nishiwaki and further in view of Jamali. Nothing was cited or found in Jamali that overcomes the deficiencies of Murray et al. in view of Nishiwaki and Matsubayashi et al. discussed above with respect to claim 1. Since claims 8 and 10 depend from claim 1, it is submitted that claims 8-10 patentably distinguish over Murray et al. in view of Nishiwaki and Jamali for the reasons discussed above with respect to claim 1.

In item 6 on pages 6-8, claims 12-14, 18 and 19 were rejected as unpatentable over Murray et al. in view of Nishiwaki and further in view of Mao et al. Nothing was cited or has been found in Mao et al. suggesting modification of Murray et al. and Nishiwaki to overcome the deficiencies discussed above with respect to claim 1. Claims 18 and 19 have been canceled and since claims 12-14 depend from claim 1, it is submitted that claims 12-14 patentably

distinguish over Murray et al. in view of Nishiwaki and Mao et al. for the reasons discussed above with respect to claim 1 and Murray et al. in view of Nishiwaki and Matsubayashi et al.

In item 7 on page 8 of the Office Action, claim 23 was rejected as unpatentable over Murray et al. in view of Nishiwaki, Jamali and Matsubayashi et al. Like claim 21, claim 23 recites "recognizing individual character images in an image of a character string to identify a word for each area delimited by each key character or key word in the character string image to be recognized" (claim 23, last 3 lines). Nothing was cited or has been found in Jamali suggesting modification of Murray et al., Nishiwaki and Matsubayashi et al. to overcome the deficiencies noted above with respect to claims 1 and 21. Therefore, it is submitted that claim 23 patentably distinguishes over Murray et al. in view of Nishiwaki, Jamali and Matsubayashi et al. for the reasons discussed above with respect to claim 21.

Summary

It is submitted that the references cited by the Examiner do not teach or suggest the features of the present claimed invention. Thus, it is submitted that claims 1-8, 10-17 and 20-24 are in a condition suitable for allowance. Reconsideration of the claims and an early Notice of Allowance are earnestly solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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